

The impacts of marketing and operations capabilities on financial performance in the UK retail sector: A resource-based perspective

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Research Highlights

- Relationships among marketing capability, operations capability and financial performance.
- Marketing capability has a significant impact on operations capability.
- Operations capability is significantly and positively related to retail efficiency.
- Operations capability fully mediates the marketing capability–financial performance relationship.

Abstract

Drawing upon the resource-based view (RBV) of the firm, this study investigates the relationships among marketing capability, operations capability, and financial performance. Using archival data of 186 retail firms in the UK, we find that that marketing capability has a significant impact on operations capability, and that operations capability is significantly and positively related to retail efficiency. The results also suggest that operations capability fully mediates the relationship between marketing capability and financial performance. The findings of this study provide practical insights for practicing managers to consider when developing functional capabilities in order to achieve superior financial performance.

Keywords: Marketing capability; Operations capability; Financial performance; Retail; UK

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1. Introduction

The resource-based view (RBV) of the firm attributes superior financial performance to organizational resources and capabilities (Bharadwaj, 2000). Capabilities have been broadly defined as “complex bundles of skills and accumulated knowledge that enable firms to coordinate activities and make use of their assets” (Day, 1990). Song et al. (2007) stated that each firm has a distinctive set of resources and capabilities, and some types of capabilities will be more closely related to superior performance than others. Grant (2002) described a hierarchy of organizational capabilities, where specialized capabilities are integrated into broader functional capabilities such as marketing and operations capabilities. A growing number of researchers have explicitly emphasized the importance of integrating operations and marketing perspectives in gaining competitive advantage (O’Leary-Kelly and Flores, 2002; Calantone et al., 2002; Hausman et al., 2002; Song et al., 2007; Nath et al., 2010). Although the integrated roles of the functional capabilities have become more critical than ever in achieving competitive advantage (Ho and Tang, 2004; Nath et al., 2010), marketing and operations functions have been examined separately in the management literature (Karmakar, 1996).

The marketing literature has always focused on creation of customer demand and how to provide customers a unique value proposition, such as proposing that a firm can enhance its financial performance by improving its marketing capability (Vorhies and Morgan, 2005). Operations management researchers, on the other hand, have focused on management of supply to fulfil customer demand, such as examining the effect of operations capability on firm performance (Terjesena et al., 2011). Porter (1985) argued that all functional areas of business contribute towards delivery of products and services but marketing and operations are the two key functions that create value for customers. There is a growing body of literature arguing the important role of integration of marketing and operations functions in improving firm performance (Wheelwright and Hayes, 1985; Roth and van der Velde, 1991; Balasubramanian and Bhardwaj, 2004; Ho and Zheng, 2004; Hausman et al., 2002). Mismatch between the two functions lead to production inefficiency and customer dissatisfaction, whereas a proper fit lead to sustainable competitive advantage (Ho and Tang, 2004). It is widely accepted among business leaders that ability to integrate such cross-functional expertise is vital to both competitive advantage and long-term

success (Wind, 2005). Surprisingly, no other empirical studies have looked into the actual linkage between marketing capability and operations capability and their impacts on financial performance. Hence, in the present study, we seek to clarify the relationships among the three constructs holistically.

We adopt a resource-based perspective for theory development and hypothesis framing purposes. The RBV describes how an individual firm's resources (e.g. tangible and intangible assets and organizational capabilities) affect its financial performance (Barney, 1991; Wernerfelt, 1984). Resources that are valuable, rare, and inimitable can lead to competitive advantage when strategically selected and deployed (Barney, 1991; Grant, 1991). Over the last few years, the RBV has been extensively adopted in both the marketing and operations management literature (Paiva et al., 2008). Using the archival financial data of 186 retail firms in the UK, we explore the links among marketing capability, operations capability, and financial performance.

The remainder of this paper is organized as follows. First, a brief literature survey on concepts relevant to this study is provided, and research hypotheses are developed. Second, the design of this study and the methodological procedures are described. Third, the findings of the study are presented and discussed, and a set of theoretical and managerial implications are drawn. Lastly, we conclude with a summary of findings and conclusions along with the main limitations and scope for future research.

2. Theoretical background and research hypotheses

2.1. Resource-based view and capability

The RBV considers a firm as a bundle of resources and capabilities (Wernerfelt, 1984). It is an influential framework for understanding how competitive advantage is achieved through intra-firm resources and capabilities (Corbett and Claridge, 2002). In general, resources refer to tangible and intangible firm assets that could be put into productive use (e.g. Amit and Schoemaker, 1993; Grant, 1991). Capability is defined as the ability of the firm to use its resource "to affect a desired end" (Amit and Schoemaker, 1993). It is like "intermediate goods" generated by the firm using organizational processes to provide "enhanced productivity to its resources" (Amit and Schoemaker, 1993). Compared to resources, capabilities is embedded in the dynamic interaction of multiple knowledge sources and are more firm-specific and less transferable thus leading to competitive advantage (Peng et al., 2008). Capabilities can be broadly categorized into those that

reflect the ability to perform basic functional activities of the firm and those that guide the improvement and renewal of the existing activities (Collis, 1994). The RBV argues that firms will have different nature of resources and varying levels of capabilities. A firm's survival depends on its ability to create new resources, build on its capabilities platform, and make the capabilities more inimitable to achieve competitive advantage (Day and Wensley, 1988; Peteraf, 1993). The RBV has been widely used in the marketing literature to understand the interaction between marketing and other functional capabilities and their effects on performance improvement (Dutta et al., 1999; Song et al., 2007; Song et al., 2005). Previous studies (e.g. Dutta et al., 1999; Nath et al., 2010; Terjesena et al., 2011; Vorhies and Morgan, 2005) have found that there is a significant relationship between functional capabilities and firm performance.

In addition, the RBV suggests that heterogeneity in firm performance is due to ownership of resources that have differential productivity (Makadok, 2001). Dutta et al. (1999) defined a firm's capability as "its ability to deploy resources (inputs) available to it to achieve the desired objectives (outputs)". Thus, the present study uses an input-output framework in the form of efficiency frontier function to understand the optimal conversion of a firm's resources to its objectives (Nath et al., 2010). Day (1994) also suggested that "it is not possible to enumerate all possible capabilities, because every business develops its own configuration of capabilities that is rooted in the realities of its competitive market, past commitments, and anticipated requirements". For the purposes of this study, we will focus on two important organizational capabilities (marketing and operations) (Day, 1994; Song et al., 2007) and investigate their effects on financial performance.

As noted earlier, the RBV views a firm as a bundle of resources and capabilities, some types of functional capabilities (such as marketing and operations) will influence firm performance (Day, 1994; Song et al., 2007). Drawing upon the RBV, we develop a conceptual framework (see Figure 1) investigating that how a firm exploits its critical capabilities in marketing and operations to improve financial performance.

Insert Figure 1 about here

2.2. Marketing capability

Marketing capability is defined as the integrative process, in which a firm uses its tangible and intangible resources to understand complex consumer specific needs, achieve product differentiation relative to competition, and achieve superior brand equity (Day, 1994; Dutta et al., 1999; Song et al., 2007; Song et al., 2005). Marketing capabilities include knowledge of the competition and of customers, as well as skill in segmenting and targeting markets, in advertising and pricing, and in integrating marketing activity (Song et al., 2007). A firm develops its marketing capabilities when it can combine employees' knowledge and skills with the available resources (Vorhies and Morgan, 2005). Firms that devote efforts and resources to interacting with customers can enhance their "market sensing" abilities (Narsimhan et al., 2006). Such capabilities, once built are very difficult to imitate for competing firms (Day, 1994). Thus, marketing capability is considered to be one of the most important sources of competitive advantage (Nath et al., 2010). The marketing literature suggests that firms use capabilities to transform resources into outputs based on their marketing mix strategies and such marketing capabilities is related to their business performance (Vorhies and Morgan, 2003). Song et al. (2007) argued that marketing capability helps a firm build and maintain long-term relationship with customers and channel members. Marketing capability creates a strong brand image that allows firms to achieve superior firm performance (Ortega and Villaverde, 2008). Empirical studies have found a significant relationship between marketing capability and financial performance (Dutta et al., 1999; Nath et al., 2010; Song et al., 2005; Vorhies and Morgan, 2005). For instance, Nath et al. (2010) found that marketing capability has a significant impact on business performance. Vorhies and Morgan (2005) also found that marketing capability is positively and significantly related to firm performance. Using the above arguments, the following hypothesis is proposed.

H1: Marketing capability has a positive impact on financial performance.

2.3. Operations capability

Operations capability is defined as the integration of a complex set of tasks performed by a firm to enhance its output through the most efficient use of its production capabilities, technology, and flow of materials (Dutta et al., 1999; Hayes et al., 1988). Superior operations capability increases efficiency in the delivery process, reduce cost of operations and achieve competitive advantage (Day, 1994). Operations capabilities are fundamental proficiencies that enable firms to achieve production-related goals such as consistent product quality, cost reduction, volume and

product flexibility, and delivery dependability and speed (Boyer and Lewis, 2002; Swink and Hegarty, 1998; White, 1996; Terjesena et al., 2011). Superior operations capabilities have long been recognized as a source of competitive advantages and superior performance outcomes (e.g. Vickery et al., 1993; Terjesena et al., 2011; Peng et al., 2008). It argues that a firm can achieve competitive advantage by handling an efficient material flow process, careful utilization of assets, and acquisition and dissemination of superior process knowledge (Tan et al., 2007). Among the operations capabilities most commonly, strongly, and positively associated with competitive success are those contributing to a firm's ability to compete on the bases of time, flexibility, low costs, and product quality (White, 1996). Some empirical studies have identified the important effect of operations capability on firm performance (Rosenzweig et al., 2003; Nath et al., 2010; Terjesena et al., 2011). Using a sample of 167 UK-based high technology manufacturing firms, Terjesena et al. (2011) found that that firm performance (such as sales growth, return on sales, and return on assets) is significantly predicted by operations capabilities that promote low operating costs and product quality. Rosenzweig et al. (2003) found that enhanced competitive capabilities (such as product quality, cost, process flexibility, and delivery reliability) generally improve business performance. Using archival data of 102 UK-based logistics companies, Nath et al. (2010) also found that operations capability significant impacts business performance (such as profitability). Based on the above argument and the results of these empirical studies, we propose the hypothesis below.

H2: Operations capability has a positive impact on financial performance.

2.4. Marketing and operations capability

The interdependence of manufacturing and marketing, in general, has been widely recognized for a long time (St John and Hall, 1991). Some previous studies (e.g. Srinivasan et al., 1997; Dutta et al., 1999) have identified the high complementarity between marketing and operations capabilities. Hill (1994) stated that "the links between design, manufacturing, and markets are the very essence of a business". Customer needs generate the product's functional specification, which in turn generates the product specification (Hill, 1994). In the predominant marketing research paradigm, the marketing function generates a spectrum of product concepts as a bundle of well-defined attributes, with price included as an attribute (Srinivasan et al., 1997). However, there is little empirical research that has directly explored the linkage between marketing

capability and operations capability. Based on a review of the literature, in this study, we would argue that marketing capability is an antecedent of operations capability. A firm's marketing capability can strengthen its ability to develop innovative operations processes.

Marketing capability spans processes that are established within organizations to decipher the trajectory of customer needs through effective information acquisition, management, and use (Krasnikov and Jayachandran, 2008). It involves the processes that enable a firm to build sustainable relationships with customers (Day, 1994), which in turn will lead to improved operations capability such as new product development and more flexible delivery. Previous studies (e.g. Gatignon and Xuereb, 1997; Dutta et al., 1999) have highlighted the important role of marketing in improving operations capability, for example, viewing marketing capability as important determinants of new product development and success. Operations capability is "the skills and knowledge that enable a firm to be efficient and flexible producers or service providers that use resources as fully as possible" (Krasnikov and Jayachandran, 2008). Overall, operations capability has been viewed as focusing on efficient delivery of high quality products/services, cost reduction, and flexibility improvement (Tan et al., 2007). Operations capability can draw on marketing capability to further its goals (Dutta et al., 1999). A superior marketing capability can provide high-quality consumer feedback to operations function. For example, operations can use inputs and get feedback from marketing function on various customer-ready prototypes, which in turn will enhance the likelihood of the final product being acceptable to consumers while being produced at as a low cost as possible (Dutta et al., 1999).

Operations capability should be developed in the context of the marketing capability. Using a sample of 117 leading retail banks, Roth and van der Velde (1991) showed how critical success factors are used to link operations and marketing in service firms. They suggested that the marketing strategy embodies the management of demand, i.e., identifying, understanding, and creating need satisfying products and services, and that the operations strategy concerns the management of supply, i.e., the production and delivery of products and services. O'Leary-Kelly and Flores (2002) also argued that the "time differential" exists between marketing and operations decisions, in that marketing-based decisions are typically a source of input for the operations-based decisions. For example, in a typical marketing-operations planning cycle, the marketing/sales planning decisions serve as a primary input for the operations planning decisions which then follow (Vollmann et al., 1997). It can be argued that marketing and operations must not only be

structurally aligned for competitive advantage, but also that marketing plays a pivotal role in affecting operations strategy and capability. The firm's marketing capability (such as market knowledge about customer needs and past experience in forecasting and responding to these needs) can proactively generate operations capabilities in terms of quality, delivery, flexibility and cost. Based on the above argument, we propose the following hypothesis.

H3: Marketing capability has a significant impact on operations capability.

3. Methodology

3.1. Data

We chose retail firms in the UK to test our conceptual framework. All the data required for this study were obtained from the Financial Analysis Made Easy (FAME) database (Bureau van Dijk Electronic Publishing, <https://fame.bvdep.com/>). Initially, we obtained top 500 retailers based on their turnover in 2010. Out of that, 314 firms did not have complete information. So, the final sample consisted of 186 retailers in the UK and these retail firms operated their business in both food and non-food sectors, such as supermarket retailing, home appliances, DIY and home improvement, and fashion retailing. The results of demographic characteristics of these 186 firms are reported in Table 1.

Insert Table 1 about here

3.2. Data envelopment analysis (DEA)

The RBV proposes that a firm uses its resources (inputs) to generate business performance (outputs) through functional capabilities (process transformation) (Nath et al., 2010). Thus, in this study, we evaluated operations and marketing capabilities and retail efficiency using Data Envelopment Analysis (DEA) (Cooper et al., 2007; Ramanathan, 2003). DEA is a mathematical programming technique commonly used for estimating the efficiencies with which different decision-making units (DMUs) (schools, hospitals, retailers, etc.) are able to convert their resources (usually called inputs in the DEA literature) to good performance (usually called outputs). To calculate efficiency scores employing DEA, two different assumptions can be made, i.e. constant return to scale (CRS) and variable returns to scale (VRS). The VRS efficiency score

measures pure technical efficiency, i.e. a measure of efficiency without scale efficiency. On the other hand, the CRS efficiency score represents technical efficiency which measures inefficiencies due to the input/output configuration and the size of operations (Cooper et al., 2007). Scale efficiency can be computed by the ratio of CRS efficiency to VRS efficiency. Hence, scale efficiency of a DMU operating in its most productive scale size is one.

3.3. Measures

We measured functional capabilities of firms in terms of their efficiency in transforming marketing and operations resources (function specific inputs) to marketing and operations objectives (function specific outputs). The measures used in this study for marketing capability, operations capability, and financial performance are reported in Table 2 and described in more detail below.

 Insert Table 2 about here

Marketing capability is an integrative process in which a firm uses its resources to achieve its market related needs of business (Vorhies and Morgan, 2005). Thus, we used the input-output framework to measure marketing capability and archival financial data is the best way to do it. Following the work of Nath et al. (2010), we used sales as the output measure. Using sales as an output for marketing activity is also supported in the marketing literature (Kotabe et al., 2002; Slotegraff et al., 2003). We used three inputs as measures of marketing resources: stock of marketing expenditure, intangible resource, and relationship expenditure. In the input-output classification, marketing capability of a firm measures how close it is to the sales frontier given a set of resources. Thus the closer is the sales value realized by the firm from the sales frontier, the better is its marketing capability (Nath et al., 2010). We used input-oriented CRS DEA model (Cooper et al., 2007) to measure the efficiency of such transformation for the retail firms. The DEA efficiency score measures marketing capability of each firm.

Drawing upon the RBV, we also employed the input-output framework to measure operations capability of a firm. We used cost of operations as the output measure (Dutta et al., 1999; Narsimhan et al., 2006). In accordance with Nath et al.'s (2010) work, we used two inputs to measure operations resources: cost of capital and cost of labour. The retail industry is highly

labour intensive. Operations capability is the closeness of the firm to the cost frontier. Similarly, we used input-oriented CRS DEA model (Cooper et al., 2007) to measure the efficiency of such transformation for both the efficient and the inefficient group of firms. The DEA efficiency score measures operations capability of each firm.

As mentioned earlier, the present study employed DEA (Cooper et al., 2007; Ramanathan, 2003) as a tool to measure input-output transformation. To measure retail efficiency, we used two inputs in this study, namely, total assets and number of employees (Yu and Ramanathan, 2008, 2009; Nath et al., 2010) (see Table 2). We chose two output measures – return on assets and return on capital employed which directly reflects how well a retail firm is able to convert its inputs to generate superior profitability (Nath et al., 2010). We used input-oriented CRS DEA model (Cooper et al., 2007) to measure the efficiency of such transformation.

We used two control variables: firm age and retail characteristic (food and non-food sectors). Firm age is the number of years since firm formation. Firm age was controlled in the current analyses because older retailers may possess more fully developed functional capabilities (Terjesena et al., 2011). Older firms will be more likely to overcome performance threatening liabilities. The effects of services and functional capabilities on improved retail efficiency are different among retailers (e.g. grocery retailers vs. clothing and footwear retailers).

4. Results

To test the hypothesised links in our conceptual framework, structural equation modelling (SEM) was used in this study. The results of structural model using AMOS 20 are reported in Table 3. The overall fits of the structural model are good, with the CFI, IFI, and TLI well above the recommended threshold of 0.90 (Hu and Bentler, 1999), the RMSEA less than 0.10 (Kline, 1998), and the SRMR less than 0.08 (Hu and Bentler, 1999). While firm age ($\beta = -0.070$, n.s.) does not affect retail efficiency, retail characteristic ($\beta = 0.115$, $p < 0.10$) has a positive impact on retail efficiency. As shown in Table 3, the results indicate that marketing capability has a significant positive impact on operations capability, which lends support for H3. Similarly, the structural model shows that operations capability is significantly and positively related to financial performance. Hence, H2 is fully supported. However, marketing capability has no significant direct effect on financial performance. As such, H1 is rejected.

To identify the particular extent to which operations capability mediates the effect of marketing capability on financial performance, we conducted the Sobel test (Sobel, 1982) to directly examine the significance of the mediation effects using the interactive tool provided by Preacher and Leonardelli (2003). As an additional test for mediation, Mackinnon et al. (2002) suggested that the Sobel test is superior in terms of power and intuitive appeal. The Sobel test lends additional support for the mediated relationships hypothesized through a change in significance of the indirect effect. The result of the Sobel test provides support for the fully mediating effect of operations capability ($t = 4.725, p < 0.001$) on the relationship between marketing capability and financial performance.

Insert Table 3 about here

5. Discussions and implications

5.1. Discussions

Our structural model strongly supports Hypotheses 2 and 3. Therefore, marketing capability has a significant impact on operations capability, and that operations capability is significantly and positively associated with financial performance. However, there is no significant direct relationship between marketing capability and retail efficiency. This finding suggests that operations capability is a mediator of the relationship between marketing capability and financial performance.

Although the value of marketing and operations capability has been recognized (e.g. Nath et al., 2010; Song et al., 2005; Terjesena et al., 2011; Vorhies and Morgan, 2005), few empirical studies have looked into the actual link between the two functional capabilities and their impacts on financial performance. Our structural path analysis suggests that marketing capability helps retail firms enhance their operations capability, which in turn leads to improved financial performance. Retailers with better resource-performance transformation ability have superior market knowledge and create better value for their customers. This corroborates with market orientation literature (Jaworski and Kohli, 1993; Narver and Slater, 1990). A retailer's marketing capability depends on its ability to understand customer needs and build long-term relationships. Using its unique and inimitable marketing capability, the retailer can devote its marketing

resources more effectively to creating superior customer value. To survive in an increasingly dynamic and competitive marketplace, better marketing capability leads to competitive advantage for retailers and help them strengthen operations capability (such as providing higher quality products and services at lower prices). Our finding of the positive effect of operations capability on improved business performance (retail efficiency) is consistent with the predictions of the RBV (Amit and Schoemaker, 1993; Grant, 1991) and previous studies (e.g. Terjesena et al., 2011; Nath et al., 2010). The empirical findings support the conceptual arguments from some researchers (e.g. Wheelwright and Hayes, 1985; Roth and van der Velde, 1991) who emphasized that the functional integration of operations and marketing has a significant impact on business performance. Hence, retail firms should consider integrating their functional departments (such as operations and marketing functions) in order to obtain financial benefits from the development of functional capabilities.

Our structural path analysis indicates that there is no significant direct path between marketing capability and financial performance, which provides stronger evidence of fully mediating effects of operations capability. The Sobel test results further confirm the significance of paths between marketing capability and operations capability and between operations capability and performance, thus casting operations capability as a mediator. This provides support for the argument that those firms that develop an effective operations capability are able to obtain superior financial performance compared to those who do not develop an effective operations capability (Terjesena et al., 2011; Vickery et al., 1993). Our findings suggest that retailers operating in an increasingly competitive market should place greater emphasis on the development of operations capability because it is operations capability that directly affects retail efficiency. Superior operations capabilities are reflected in efficient and reliable delivery processes, cost reductions and control, increased volume and mix flexibility, and exceptional conformance quality (Boyer and Lewis, 2002; Swink and Hegarty, 1998; White, 1996), and lead to competitive advantage and the corresponding financial rewards. However, marketing capability should not be ignored because it strengthens operations capability and has an important effect on retail efficiency, but the influence is articulated through and modified by operations capability.

5.2. Theoretical implications

This study fills a gap in the existing literature since there is limited work that integrates functional capabilities (operations and marketing) to examine their roles in improving firm performance. Our study contributes to the literature on marketing and operations in several ways. Drawing upon the RBV theory, we develop a framework to investigate the relationship between operations capability and marketing capability and their impacts on financial performance. As noted earlier, the empirical findings of this study support the conceptual arguments from some scholars (e.g. Grant, 2002) who suggested that specialized capabilities are integrated into broader functional capabilities such as operations and marketing capabilities. Although the impact of marketing and/or operations capability on a firm's financial performance has been studied (e.g. Song et al., 2005; Terjesena et al., 2011; Nath et al., 2010), our study is unique in that it explores the link between marketing capability and operations capability and reveals the mediating role of operations capability on the marketing capability–financial performance relationship. Hence this study empirically examines the relationships among the three constructs holistically.

5.3. Managerial implications

The managerial implications of this study are twofold. First, according to the RBV, it is important for firms to invest in and exploit their functional capabilities (such as marketing and operations) in order to achieve competitive advantages and superior firm performance. Thus, retail managers are encouraged to improve their marketing and operations capabilities, such as deploying resources to improve their marketing communication strategies and providing innovative new products and services. Second, it is important for managers to understand the relationship between operations and marketing capabilities. Our results suggest that there is no significant direct relationship between marketing capability and financial performance, indicating a full mediating role of operations capability. We believe that this can give retail managers a new way to understand the relationships between functional capabilities and their impacts on operational efficiency. Successful integration of functional capabilities is the key to success. Firms should emphasize on the development and maintenance of operations capability in order to gain superior financial performance. Careful deployment of resources on operations improvement such as capacity planning and control, just-in-time (JIT) inventory systems and total quality improvement (TQM) is essential to build operations capability. However, as an antecedent of operations capability, marketing capability should not be ignored. Firms should also deploy their resources on marketing

activities such as advertisement, trade promotion and customer relationship management to build marketing capability.

6. Conclusion

Drawing upon the RBV, we have developed a framework that examines the relationships among marketing capability, operations capability, and financial performance. Our structural model has suggested that marketing capability has a significant positive effect on operations capability, and that operations capability is significantly and positively related to financial performance. More specifically, operations capability fully mediates the relationship between marketing capability and financial performance. The findings of this study also provide practical insights for practicing managers to consider when developing functional capabilities in order to achieve superior financial performance. More specifically, this study provides managerial guidelines for managers to decide how to devote their efforts and resources to developing different functional capabilities (such as marketing capability and operations capability), and which functional capabilities directly influences financial performance.

This study has some limitations. According to the resource-capability-performance framework suggested by the RBV, we tested the hypotheses using archival data. However, such secondary data do not provide insights into the actual transformation process on how different firms have assimilated these constructs into their business process. Survey-based research or research that combines survey data and archival data may generate in-depth understanding of the process. Thus, future research may collect primary data using questionnaires and also confirm the results obtained in this study. In addition, functional capabilities in this study were characterized by two principal capabilities of marketing and operations. However, according to the RBV, each organization has a distinctive set of resources and capabilities (Day, 1990; Song et al., 2007). Future study may identify more relevant functional capabilities (such as IT capability, market-linking capability, supply chain capability, or financial capability) and examine their important roles in improving firm performance. Finally, some literature (e.g. Dutta et al., 1999) suggests that interactions among functional capabilities are critical drivers of competitive advantage. Future research may extend our research model by examining the potential interactions among different functional capabilities (such as marketing, operations, and financial capabilities). Such interaction effects may be tested using a multiple regression analysis or a lead-lag analysis.

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Table 1: Profile of 186 retail firms

| | Number of firms | Percent (%) |
|------------------------|-----------------|-------------|
| Retail sector | | |
| Food | 38 | 20.4 |
| Non-food | 148 | 79.6 |
| Firm age (year) | | |
| 1-20 | 88 | 47.3 |
| 21-50 | 54 | 29.0 |
| 51-100 | 37 | 19.9 |
| More than 100 | 7 | 3.8 |

Table 2: Variables and measures

| | Variables | Measures | Mean | S.D. |
|--|--------------------------------|---|-------------|-------------|
| Marketing Capability | | | | |
| <i>Inputs</i> | Stock of marketing expenditure | Sales, general and administrative expenses ^a | 252949.924 | 542514.742 |
| | Intangible resources | Intangible assets ^a | 148428.790 | 507814.239 |
| | Relationship expenditure | Cost of receivables ^a | 40005.833 | 323783.405 |
| <i>Outputs</i> | Sales | Turnover ^a | 1785724.010 | 6053155.520 |
| Operations Capability | | | | |
| <i>Inputs</i> | Cost of capital | Tangible assets ^a | 530337.650 | 2243635.097 |
| | Cost of labour | Remuneration ^a | 211613.623 | 661550.476 |
| <i>Outputs</i> | Cost of operations | Cost of sales ^a | 1430041.548 | 5476373.163 |
| Financial Performance (retail efficiency) | | | | |
| <i>Inputs</i> | Assets | Total assets ^a | 1158246.193 | 4096310.017 |
| | Number of employees | Actual value | 12358.919 | 39018.653 |
| <i>Outputs</i> | Return on assets | Actual value (%) | 10.420 | 8.670 |
| | Return on capital employed | Actual value (%) | 22.178 | 23.193 |

Note: ^a value in thousands of GBP

Table 3: Results of hypotheses 1–3 tests using SEM

| Structural paths | Standardized coefficient | t-value | Hypothesis test |
|--|--------------------------|---------|-------------------|
| Marketing capability → Operations capability | 0.634*** | 11.155 | H3: Supported |
| Operations capability → Financial performance | 0.432*** | 5.211 | H2: Supported |
| Marketing capability → Financial performance | 0.081 | 0.962 | H1: Not supported |
| Model fit statistics: χ^2/df (4.848/2) = 2.424; RMSEA = 0.088; CFI = 0.981; IFI = 0.982; TLI = 0.905; SRMR = 0.035 | | | |

*** $p < 0.001$.

Figure 1: Conceptual framework

